The Hook fishery on Lake Victoria, Uganda

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On information on Catch assessment, Mukene fishery, gillnet, hook fisheries and prospects for commercial fish farming.

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Introduction

Lake Victoria is very important to the economies of the three East African partner states producing about 500,000 tons of fish annually worth US $ 600m at the landing sites, and contributed about US$ 217m in export in 2001. This Nile perch export in Uganda is presently estimated at 100m in Uganda. 30 million people live in the basin and 10% of this population depends on the lake by catching the fish or engaged in fishery related activities. The dynamics of the fishery of Lake Victoria has changed dramatically since the emergency of the Nile perch fishery in the late 1970s and the subsequent evolution of the processing for Nile perch export. The incentive created by the ready market by the fish processing plants has fuelled rapid increase in fishing effort.

Fish processing plants in Uganda (about 14) process Nile perch for export under strict quality control to meet the quality requirements. The fish stocks of Lake Victoria are exploited using gill nets, small dagaa seines, hooks, beach seines, cast nets, traps each targeting particular fish species or a variety of species.

Key challenges in Hook fishery of Lake Victoria

a) Limited information on the magnitude and value of the hook fishery;
b) Limited information on appropriate size of the hooks to be used in the hook fishery for management purposes;
c) Limited information on the suitable types and sizes of bait;
d) Inadequate supply of bait;
e) Use of illegal gear in collecting live bait from the wild; and
f) Lack of information on operation of the hook fishery to guide its development of the fishery (choice of materials, rigging and manipulation of the gear).

Hook Fishery

Hooks are operated by passively set longlines or actively by trolling (towing the longline) or hand and line/angling. The hooks are baited with mainly live fish when targeting the Nile perch or worms when fishing for the Nile tilapia.

Effort changes in hook fishery on Lake Victoria

Frame surveys conducted on Lake Victoria in 2000, 2002 and 2004 have shown major changes in the hook fishery on the lake as shown below:

Description	2000	2002	2004
No. of Hooks (hook and line)	4,585	6,547	8,335

Total	**750**	**251**

Preliminary information obtained at 10 fish landing sites selected randomly in Uganda waters from an estimated 750 fishing boats showed that 251 (33.5%) were hook fishing boats.

Of the 84 hook fishing boats (fishers interviewed) 79.8% were for longline and 20.2% were for hook and line. The average number of hooks per boat was 694 and 10 for longline and handline respectively. Trolling fishers were not encountered.

Hook size distribution in longline and hook and line fishery on Lake Victoria

The hook size range in use was size 4-12. Size 7 and 11 in hook and line (Table 2).

Table 2. Hook size distribution in Longline and Hook and Line fishery on Lake Victoria (Uganda) 2005

Hook size	Percentage	Percentage
	Longline	Hook and Line
4	0.3	-
5	1.20	-
6	-	-
7	11.00	9.0
8	22.00	-
9	35.00	18.0
10	29.00	68.0
11	1.00	4.5
12	1.00	-
N =	46287	168

The most suitable size of hooks to be used in the hook fishery targeting especially the Nile perch has not been fully determined.

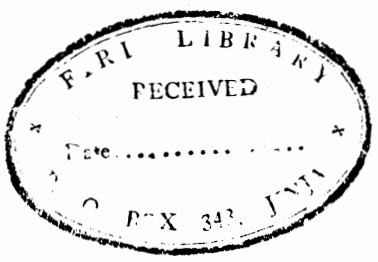
Fishery management has therefore adopted a precautionary approach in recommending the size of hook to be used as size 9-11. There is therefore need to determine the most suitable size of hooks to be used on the lake.

Boats propulsion in Hook fishery

The majority of boats 57 (67.9% used paddles and 27 (32.1%) used outboard engines. Outboard engine HP range was 6-15 in the following order; 15HP (59.2%), 9.9HP (18.5%), 9HP (3.7%), 8HP (14.8%) and 6HP (3.7%).

Boat size in Hook Fishery

The Longline boat size was in the range of 4-14m (average 7.53m) 61 boats and Hook and Line / Angling (13 boats) size range was 5-7 and average 5.40m.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Price of Nile perch and Nile tilapia

The price of Nile perch and Nile tilapia varied depending on the size as shown below:

Nile perch	Price Ug. Shs	Nile tilapia	Price Ug. Shs.
Small fish < 1kg	1030.25	<1kg	129.17
Medium 1-20kg	1775.93	1-20kg	934.62
Large >20kg	1811.43	>20kg	NA

Advantages of Hook fishery to other fishing methods for Nile perch and Nile tilapia

- Gear is cheap and affordable
- Long lining can be used to get vertical and horizontal distribution of fish
- The catches are fresh and preferred by both consumers and industrial processors
- Using appropriate hook size and type/size of bait tend to catch large size of Nile perch.
- A source of employment

Disadvantages

- Selectivity of hooks is not yet well understood. It could be attributed to both hook size, nature and bait type and size and other bait characteristics e.g colour, odour, etc.
- The hooks pose a risk to the fishers if not carefully handled.

Challenges in Hook fishery

- The type of fish caught may not necessarily depend on the size of hook and baits applied as a single entity.
- Smuggling of live bait into Lake Victoria basin from outside sources might lead to introduction of alien species/diseases.
- Inadequate skills in choice of materials, rigging and manipulation of the gear.
- Uncertainty in getting enough of the live baits thus affecting planning of the fishing operations.
- The current methods of collecting live bait on lake Victoria encourages the use of illegal gears.
- The present sizes, types and propulsion methods of the vessels do not enable fishers to offshore fishing grounds.
- Understanding the major cues between sight and odour of the prey

General observation and Conclusions

The acquisition of bait was a major constraint in the hook fishery especially when use of small mesh size seines in prohibited on the lake. There is need to encourage bait production especially African catfish by fish farmers in the basin. Bait transportation technologies and bait holding facilities should be established at marketing channels on Lake Victoria.